REMARKS

In the Office Action of June 11, 2001 in the above-identified application, Claims 1 and 6 - 16 were rejected. No Claim was allowed. In response, Claims 1 and 13 are amended Reexamination and reconsideration are respectfully requested in view of the following remarks.

Request for Entry of Amendments

Applicants hereby request that the amendments presented herein be entered in the application under 37 CFR 1.116. The amendments presented herein simplify the issues for consideration and thereby place the claims in better form for allowance or appeal. In particular, Claim 1 is amended to delete the language "at least one" in reference to the rigid riser part and the flexible riser part in order to clarify that the pipe of the present invention comprises two parts, one part that is a rigid riser and one part that is a flexible riser. Claim 13 is amended to correct obvious errors and to cure the antecedent basis problems noted by the Examiner.

Rejection of Claims 13 - 16 under 35 U.S.C. § 112, second paragraph

Claims 13 - 16 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. In particular, the Examiner alleges that Claims 13 recites the limitations "the extreme motions in part (a) of part (A) and "the distance" in part (a) of part (B). In response, Claims 13 is amended to delete the

article "the" in the places noted by the Examiner. It is respectfully submitted that this rejection is thereby overcome.

Rejection of Claims 1 and 7 - 16 under 35 U.S.C. §103(a) over Moses et al

Claims 1 and 7 - 16 were rejected under 35 U.S.C. §103(a) over Moses et al. The Examiner alleges that Moses et al discloses the limitations of Claim 1, except for the rigid part having a length at least equal to half of the water depth, and the Examiner further takes the position that finding the optimum length is a design choice within the ordinary skill in the art. In response to Applicant's arguments in response to the previous Office Action that Moses does not disclose at least one flexible riser part, the Examiner takes the position that the combination of intermediate pipe sections and flexible couplings meet the limitation of a flexible riser part.

This rejection is respectfully traversed. In particular, it is respectfully submitted that the combination of intermediate rigid pipe sections and flexible couplings do not meet the limitation of a flexible riser part. The reason is that the term "flexible riser" is a term of art with a specific meaning to persons skilled in the art of subsea transfer of fluids and specifically refers to a flowline that is continuously flexible or hose-like. See, for example, U.S. Patent No. 4,906,137 to Maloberti et al (Col. 1, lines 10 - 53) and U.S. Patent No. 4,661,016 to Baugh et al (Col. 3, lines 44 - 65). (Maloberti had been previously cited in the application. A copy of Baugh is attached with a Form PTO-1449.) The limitation that the

structure of the present invention include a flexible riser is clearly not met by the structure of Moses et al, which shows a structure having a plurality of rigid risers joined together in series by means of flexible couplings. This structure is not a "flexible riser" as this term is understood in the art.

Moreover, if one were to adopt the Examiner's position that the combination of pipe sections and flexible couplings meet the limitation of a flexible riser part, ignoring the fact that Moses et al explicitly requires rigid riser sections and does not contain flexible riser sections, then one would have to characterize the entire structure of Moses et al as a flexible riser, since the riser section 28 is joined to the offshore platform by a flexible coupling and is also joined with the rest of the riser by a flexible coupling. If the entire structure of Moses et al were to be characterized as a flexible riser, then the structure would not meet the limitation of having a flexible riser and a rigid riser distinct from the flexible riser. In either case, Moses et al does not meet the limitations of the present claims.

Further evidence that the structure of Moses et al is not a "flexible riser" is that Moses et al discusses flexible risers in its prior art section (Col. 2, lines 21 - 40) as being something distinctly different from their structure. (Moses et al do not characterize their structure as a flexible riser, but rather as a "flexible/rigid riser system".) The noted paragraph, in discussing flexible risers that extend from the well head to a floating platform, emphasizes what Moses et al see as the drawbacks or disadvantages of flexible risers. Accordingly, the

reference teaches away from the use of flexible risers generally, and so, therefore, the substitution of a flexible riser for the structure of rigid risers/flexible couplings of Moses et al would not have been obvious.

Accordingly, it is respectfully submitted that Claims 1 and 7 - 16 would not have been obvious over Moses et al.

Rejection of Claim 6 under 35 U.S.C. §103(a) over Moses et al in view of Willis

Claim 6 was rejected under 35 U.S.C. §103(a) over Moses et al in view of Willis. Moses et al is cited for the reasons discussed above, and Willis is cited as teaching insulated pipes.

This rejection is respectfully traversed. As discussed above, Moses et al does not disclose or suggest the combination of a flexible riser and a rigid riser, with a rigid riser connected to a floating support and a flexible riser connected to a point located below the surface. Willis does not supply this missing feature of the present invention. Accordingly, it is respectfully submitted that Claim 6 would not have been obvious over Moses et al alone, or in combination with Willis (EPO 0467635 A2).

Conclusion

In view of the foregoing amendments and remarks, it is respectfully submitted that Claims 1 and 6 - 16 are allowable. Favorable reconsideration is respectfully requested.

Should the Examiner believe that anything further is necessary to place this application in condition for allowance, the Examiner is requested to contact applicants' undersigned attorney at the telephone number listed below.

Kindly charge any additional fees due, or credit overpayment of fees, to Deposit Account No. 01-2135 (Case No. 612.37981X00).

Respectfully submitted,
ANTONELLI, TERRY, STOUT & KRAUS

Ralph T. Webb
Reg. No. 33,047

RTW/RTW:lcb
(703)312-6600

Marked up copy to show changes made:

IN THE CLAIMS

1) (twice amended) A pipe for great water depths (D) allowing transfer of a fluid between a floating support (1) and a point located below and at a distance from the water surface, characterized in that it comprises:

~~at least one~~ a flexible riser part (7) connected, at one end, to the point located below the surface, and

~~at least one~~ a rigid riser part (6) connected to the flexible riser part at one end and to the floating support at the second end thereof,

said rigid riser part (6) having a length at least equal to half the water depth.

13) (amended) A method of designing a pipe as claimed in claim 1 for use in conveying a particular fluid, and for use in a body of water that exerts stresses on the pipe and the floating support due to wave motion, current and wind, the stresses thereby causing motions in the pipe and/or the floating support, and wherein the flexible riser part will have a definable internal pressure resulting from the conveying of the particular fluid, a definable external pressure resulting from the water depth, a definable maximum traction resulting from stresses from the body of water, and a definable maximum allowable curvature, resulting from the composition of the flexible riser part, and wherein the rigid riser part has a defined holding means wherein it can be connected inside or on an edge of the floating member

without coming into contact with the floating member, and wherein the rigid riser part has a defined diameter, and wherein the rigid riser part is subject to stresses generated by the weight of the pipe, the suspended weight of the flexible part, hydrodynamic strains, strains induced by displacements of the floating support, inside pressures and outside pressures,

the method comprising the steps of

A) defining the flexible riser part by the steps of

a) determining ~~the~~ extreme motions that the floating support would be subjected to in the body of water and assuming that extreme motions at an end of the flexible riser part where it is connected to the rigid riser part are substantially identical to the extreme motions of the floating support, and

b) selecting a point (Ph) along a vertical axis that coaxial to the axis that the rigid riser <u>part</u> will have when the rigid riser <u>part</u> is connected to the floating support, wherein the first point (Ph) is closer to the bottom of the body of water than to the top of the body of water and determining whether the point (Ph) can serve as the location where the flexible riser part is connected to the rigid riser part, the determining taking into account the extreme motions that the end of the flexible riser part where it is connected to the rigid riser part would be subjected to, as determined by step (a), and further taking into account the inside pressure, the exterior pressure, the nature of the fluid, the maximum traction of the flexible riser part and the maximum allowable curvature, wherein, if point (Ph) cannot serve as the location where the

flexible riser part is connected to the rigid riser part, the step (b) is repeated with one or more additional points, until a point is found that can serve as the location where the flexible riser part is connected to the rigid riser part,

B) defining the rigid ~~flexible~~ riser part by the steps of

a) selecting the length of the rigid riser part so that the length is substantially equal to the value of ~~the~~ a distance, under equilibrium conditions, between the upper end of the flexible riser and the holding means, so that length of the rigid riser part is at least equal to half the depth of the water depth,

b) selecting the thickness of the rigid riser part by taking into account stresses generated by the weight of the pipe, the suspended weight of the flexible riser part, hydrodynamic strains, strains induced by displacements of the floating support, inside pressures and outside pressures, and

c) checking that the rigid riser part when the rigid riser part is connected by the holding means inside or on an edge of the floating support, the rigid riser part does not come into contact with the floating support, and wherein if the rigid riser part does contact the floating support, steps A) and B) are repeated with different values for the point ~~(pH)~~ (Ph).